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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,044	04/09/2004	Ronald R. Erickson	2003-02PAT	2270

7590 03/31/2006

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EXAMINER
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BOUTSIKARIS, LEONIDAS

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 03/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/822,044	<b>Applicant(s)</b> ERICKSON ET AL.	
	<b>Examiner</b> Leo Boutsikaris	<b>Art Unit</b> 2872	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11 and 14-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 14-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-11, 14-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Amended claims 1, 4, and 20 recite “a second coded pattern *that is positioned in superimposed relationship with the first set of optical information*” (amended language emphasized). This is a limitation that has not been disclosed anywhere in the specification or the Drawings. In fact, the specification does not mention anything about the structure of the holographic element that is embedded in the substrate, other than disclosing the various patterns of light said holographic elements produces upon illumination with reconstructing light. For examination purposes, the above language is ignored.

Claims 2-3, 5-11, 14-19, 21-24 inherit the deficiency of claims 1, 4, from which they depend.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Daniel (US 6,280,891).

Regarding claim 1, Daniel discloses a device for limiting the reproducibility of information in the form of a security hologram affixed to a document (Figs. 1, 3) comprising a semi-rigid carrier 1; and a holographic element 4 coupled to the carrier (Figs. 2, 4), the holographic element being such, that upon viewing, it provides a first set of optical information in the form of a first coded pattern (e.g., a bar code) 16, see Fig. 6, and a second set of optical information in the form of a second coded pattern (e.g., a bar code) 17, see Fig. 7, depending on the illumination angle (lines 53-58, col. 4, 21-48, col. 5, 12-43, col. 6). Each of the first set and second set of information represents a pattern of light, e.g., a bar code. In the above device, the first set of information is created by/included within substantially the entire planar area defined by the holographic element/grating 4, and the second set of information is created by/included in portions of the holographic element/grating 4, e.g., the whole grating.

Regarding claims 2-3, the patterns 16, 17 are used for authentication, coded according to a secret coding function/algorithm, which may be the same or different depending on the document (lines 24-32, col. 6).

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Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Drinkwater (US 6,369,919).

Drinkwater discloses a device for limiting the reproducibility of information in the form of a security hologram (Fig. 1) comprising a semi-rigid carrier; and a holographic element (2, 3) coupled to the carrier, the holographic element being such, that upon viewing, it provides a first set of optical information in the form of a first coded pattern (e.g., letter A, see Fig. 1C), and a second set of optical information in the form of a second coded pattern (e.g., letter B, see Fig. 1D), depending on the illumination angle (line 61, col. 9 to line 23 col. 10). Each of the first set and second set of information represents a pattern of light, e.g., a character. In the above device, the first set of information is created by/included within substantially the entire planar area defined by the holographic element/grating (2, 3), and the second set of information is created by/included in portions of the holographic element/grating (2, 3), e.g., the whole grating, see Fig. 1A.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Stork (US 6,271,967).

Stork discloses a device for limiting the reproducibility of information in the form of a security hologram 4 (Fig. 1) comprising a semi-rigid carrier 2; and a holographic element (16, 18) coupled to the carrier, the holographic element being such, that upon viewing, it provides a first set of optical information in the form of a first coded pattern, and a second set of optical information in the form of a second coded pattern, depending on the depth of the diffraction grating (line 1, col. 5 to line 5 col. 6). Each of the first set and second set of information represents a pattern of light, e.g., an image. In the above device, the first set of information is

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created by/included within substantially the entire planar area defined by the holographic element/grating 4, and the second set of information is created by/included in portions of the holographic element/grating 4, see Fig. 1.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US 5,825,547).

Lee discloses a device for limiting the reproducibility of information in the form of a security hologram 1 (Fig. 1) comprising a semi-rigid carrier; and a holographic element coupled to the carrier, the holographic element having two types of diffraction gratings 4 and 5, and being such, that upon viewing, it provides a first set of optical information in the form of a first image, and a second set of optical information in the form of a second image (Fig. 1, lines 46-53, col. 3). Each of the first set and second set of information represents a pattern of light, e.g., an image. In the above device, the first set of information is created by/included within substantially the entire planar area defined by the holographic element/grating 1, and the second set of information is created by/included in portions of the holographic element/grating 1, e.g., the whole grating, see Fig. 1.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Moon (US 2004/0233485).

Regarding claim 1, Moon discloses an authentication device 8 comprising a substrate 10 and a holographic element 12 coupled to the substrate including within substantially within the

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entire planar area defined by the holographic element a first set of optical information in first coded pattern (code 1) and including in one or more portions of the holographic element a second set of optical information in a second coded pattern (code 2), see Figs. 4, 36, [0149].

Each of the first set and second set of information represents a pattern of light, e.g., a bar code.

Regarding claims 2-3, the patterns code 1, code 2 are used for authentication, coded according to a secret coding function/algorithm, which may be the same or different depending on the document ([0186]).

Regarding claim 8, Moon teaches that the gratings can be imprinted on the substrate ([0057]).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7, 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon (US 2004/0233485).

Moon discloses all the limitations of the above claims except for specifying the method by which the gratings are formed within or on the substrate, namely photolithography, solvent based surface deformation, or laser disruption of the volume of the holographic element.

However, Moon teaches that the gratings can be disposed or formed within or on the substrate by different ways, e.g., written, impressed, embedded, imprinted, etched, grown, deposited ([0057]).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to use photolithography, solvent based etching or laser based ablation to form the gratings, since Official Notice is taken that the above methods are all widely used in forming microstructures within or on a substrate.

Claims 4-6, 14-20, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniel (US 6,280,891) in view of Jung (US 4,171,864).

Regarding claims 4, 17-20, 23, Daniel discloses all the limitations of the above claims including a reader system, which includes a light source 17, a first and a second detector positioned at respective predetermined distances from the location of the holographic element (provided on the surface of carrier 3), the detectors being provided on CCD sensor 18 (Fig. 8, lines 44-56, col. 6). Each detector corresponds to a respective angle of incidence for the reading light and is at a predetermined distance and orientation relative to the holographic element. However, Daniel does not specify that the reader system comprises a reader housing having an opening where the holographic element/carrier is positioned. Jung discloses an identification security document and a display system for reading it (Fig. 5), wherein the security hologram 10 is positioned inside an appropriate reader apparatus 17 through an opening (see Fig. 5, and lines 25-46, col. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to read the security document 3 of Daniel via a reader device as taught by Jung, for achieving a robust reader device ensuring the same optical alignment each time the document is read.



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Regarding claims 5, 24, the reader apparatus utilizes a microcomputer (lines 52-56, col. 6 in Daniel).

Regarding claim 6, the first and second detectors comprise arrays of detectors in the form of a CCD array 18 (lines 52-54, col. 6).

Regarding claims 14-16, Jung teaches that the authentication device is inserted through the aperture for reading the information stored in the grating (Fig. 4).

Claims 4-6, 14-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moon (US 2004/0233485) in view of Jung (US 4,171,864).

Regarding claims 4, 17-20, 23, Moon discloses all the limitations of the above claim including a reader system, which includes a light source 300, a first and a second detector 308 positioned at respective predetermined distances from the location of the holographic element (provided on the surface of carrier 10), the detectors being provided on CCD sensor (Fig. 19, [0125]). Each detector is positioned at a predetermined distance and orientation relative to the gratings. However, Moon does not specify that the reader system comprises a reader housing having an opening where the holographic element/carrier is positioned. Jung discloses an identification security document and a display system for reading it (Fig. 5), wherein the security hologram 10 is positioned inside an appropriate reader apparatus 17 through an opening (see Fig. 5, and lines 25-46, col. 3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to read the security document of Moon via a reader device as taught by Jung, for achieving a robust reader device ensuring the same optical alignment each time the document is read.

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Regarding claims 5, 24, the reader apparatus utilizes a microcomputer in order to translate the detected image into a digital signal ([0186])

Regarding claim 6, the first and second detectors comprise arrays of detectors in the form of a CCD array ([0125]).

Regarding claims 14-16, Jung teaches that the authentication device is inserted through the aperture for reading the information stored in the grating (Fig. 4).

Regarding claims 21-22, Moon discloses that the reproduction light might have multiple wavelengths ([0130], Fig. 19).

### ***Response to Applicant's Arguments***

Applicant's arguments filed on 12/29/2005 have been fully considered but they are not persuasive.

Applicant's main argument regarding all the references cited in the last Office Action is based on the assertion that none of said references discloses the added limitation that first and second optical information are superimposed in the substrate. As explained above, said limitation has not been considered, as representing new matter, hence Applicant's argument is moot.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Leo Boutsikaris whose telephone number is 571-272-2308.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Primary Patent Examiner, AU 2872  
March 29, 2006



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